



# International Emerging Infections Program

Thailand MOPH-U.S. CDC Collaboration

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## ABSTRACT

### Human and Avian Influenza in Thailand: Reducing Opportunities for Reassortment

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**Background:** The recent poultry outbreak of highly pathogenic avian influenza affected at least 9 Asian countries and resulted in death or culling of over 100 million birds. In contrast, human infection with H5N1 has so far been limited to 36 infections in Thailand and Viet Nam. H5N1 continues to kill birds, posing a continued risk to humans. We studied human and poultry interactions in Thailand to identify critical control points to reduce potential for reassortment.

**Methods:** We reviewed H5N1 data from Thailand and used data from one well-studied province (Sa Kaeo, population 438,557) to quantify human-avian interactions. As part of the outbreak response, we surveyed persons in a population-based pneumonia surveillance system about exposure to poultry. In addition, we used data from a household survey of 718 persons to estimate the burden of influenza-like illness (ILI) in the community and data from an ILI outpatient study to determine the proportion positive for H1 or H3 influenza A by viral culture.

**Results:** In Thailand, there were 12 H5N1 human infections that resulted in 8 deaths; median age was 10 years (range 2-58). Between Feb 16 and Apr 7, 2004, 186 (63%) of 295 admitted for suspected pneumonia were interviewed. In the week before illness onset, 7% visited a poultry farm, 5% touched poultry, and 3% touched or came within one meter of sick/dead poultry. Overall 12% reported owning poultry although this was 27% in the first week of the survey. A door-to-door survey found that 61% of households in one village had backyard poultry. In 2003, 39% of residents suffered from an ILI, and 5.7% of ILI outpatients had influenza A isolated. To date, no H5N1 has been detected in poultry or humans in Sa Kaeo. On April 19 H5 was detected in chicken and geese elsewhere in Thailand and 31,473 birds were culled.

**Abstract: Human and Avian Influenza in Thailand: Reducing Opportunities for Reassortment** (continued from previous page)

**Conclusion:** Avian and human influenza strains continue to co-circulate in Thailand, and poultry contact is common. The critical points to reduce risk of reassortment for viruses with pandemic potential include eliminated human H5 infections through public health messages and continued bird disease control. Efforts to engage local vaccine producers in influenza pandemic preparedness plans are warranted.

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